Release Notes for Cisco IOS Release 12.0(5)T Feature Packs for the Cisco 802 IDSL and 804 IDSL Routers

January 10, 2000

These release notes describe the Cisco IOS Release 12.0(5)T feature packs for Cisco 802 IDSL and Cisco 804 IDSL routers and contain the following topics:

- Introduction, page 2
- System Requirements, page 2
- Installation Notes, page 9
- Related Documentation, page 13
- Service and Support, page 18
- Cisco Connection Online, page 20
- Documentation CD-ROM, page 20

Note The term ISDN represents an Integrated Services Digital Network (ISDN). The term IDSL represents an ISDN digital subscriber line (IDSL).

Note Cisco 802 IDSL and Cisco 804 IDSL routers require Cisco IOS release 12.0(5)T software or above. In addition, the software images described in these release notes support the Cisco 802 IDSL and Cisco 804 IDSL routers only; they do not support the Cisco 801–804 routers or the Cisco 805 router.

CISCO SYSTEMS

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Introduction

How to Use These Release Notes

The tables in these release notes contain details about the Cisco feature packs. Use these tables to perform the following tasks before loading a software image onto a router:

1. Use Table 1, "Cisco 802 IDSL and Cisco 804 IDSL Router Default Memory and Upgrade Options," for the feature set memory requirements, factory-default memory, and available memory upgrades for your router.
2. Use Table 3, "Feature Pack Product Numbers Quick-Reference List," to identify the software image you want to load.
3. Use Table 4, "Cisco 802 IDSL and Cisco 804 IDSL Router Feature Packs," to identify your feature pack and the memory required for your feature set, based on the image you load.
4. Use the tables in the "Feature Set Tables" section on page 5 to identify which features are supported in a feature set image.

Feature Pack Components

A feature pack is a box that typically contains the following items:

- A CD-ROM with the following software:
  - Cisco IOS feature set software images that can include bundled modem firmware.
  - Router Software Loader (RSL) program (a Windows 95 application) that loads images onto your router.
  - Trivial File Transfer Protocol (TFTP) server application (for Windows 95 only).
- Getting Started with the Router Software Loader.

Note Before running RSL, see the "Alternatives to RSL" section on page 10. If you cannot use RSL to load images, you can follow the instructions in the "Alternatives to RSL" section on page 10.

- Release notes (this document).
- Other configuration or command references, if available.
- Software license for using Cisco software in object code form on a single access server or router.
- Documentation CD-ROM that contains all Cisco documentation.

System Requirements

This section describes the following topics:

- Memory Defaults and Upgrade Options, page 3
- Hardware Supported, page 3
- Software Compatibility, page 4

- Determining Your Software Release, page 4
- Updating Your Software Release, page 4
- Product Numbers Quick-Reference List, page 4
- Feature Pack Overview Table, page 5
- Feature Set Tables, page 5

Memory Defaults and Upgrade Options

Table 1 Cisco 802 IDSL and Cisco 804 IDSL Router Default Memory and Upgrade Options

Memory Type	Cisco 802 IDSL & 804 IDSL Defaults	Upgrade Options
Flash memory card	8 MB	4-MB to 8-MB upgrade: MEM800-4U8F 8-MB to 12-MB upgrade: MEM800-8U12F
DRAM	4 MB	4-MB to 8-MB upgrade: MEM800-4U8D 4-MB to 12-MB upgrade: MEM800-4U12D

Hardware Supported

The following hardware is supported:

- Cisco 802 IDSL
- Cisco 804 IDSL

Table 2 summarizes the Cisco 802 IDSL and 804 IDSL routers and the ports that each model offers.

Table 2 Cisco 802 IDSL and 804 IDSL Series Router Ports

Router	Ethernet Ports	ISDN Ports	Console Ports
Cisco 802	One 10BaseT (RJ-45)	ISDN BRI U, integrated Network Termination 1 (NT-1) (RJ-45)	RJ-45
Cisco 804	Four-port 10BaseT (RJ-45) hub	ISDN BRI U, integrated NT-1 (RJ-45)	RJ-45

The Cisco 802 IDSL and 804 IDSL routers provide the following key hardware features:

- Flash memory: the default is 8 MB, expandable to 12 MB.
- Dynamic RAM: the default is 4 MB, expandable to 12 MB.
- Color-coded ports and cable reduce the chance of cabling errors.
- Routers can be stacked or mounted on a wall.

Software Compatibility

The feature packs described in these release notes contain Cisco IOS Release 12.0(5)T software images, some images from previous software releases, and RSL Version 7.9.

Determining Your Software Release

To determine the version of Cisco IOS software running on your Cisco 802 IDSL or Cisco 804 IDSL router, log in to the router, and enter the **show version** user EXEC command.

```
router> show version
Cisco Internetwork Operating System Software
IOS (tm) c800 Software (c800-y6-mw), Version 12.0(5)T, RELEASE SOFTWARE
```

Updating Your Software Release

For information on upgrading to a new software release, see the product bulletin *Cisco IOS Software Release 12.0 T Upgrade Paths and Packaging Simplification (#819: 1/99)* on CCO at:

Service & Support: **Software Center**: **Product Information**: **Product Bulletins**: **Software**: **Cisco IOS 12.0**: **Cisco IOS Software Release 12.0T Upgrade - No. 819**

Product Numbers Quick-Reference List

Table 3 Feature Pack Product Numbers Quick-Reference List

Product Number	Feature Pack Description
CD08-IC-12.0.5T=	Cisco 800 Series Internet DSL Feature Pack
CD08-ICHL-12.0.5T=	Cisco 800 Series Internet DSL FW IPSec Feature Pack
CD08-IBHL-12.0.5T=	Cisco 800 Series Internet DSL IPX FW IPSec Feature Pack

Feature Pack Overview Table

Table 4 Cisco 802 IDSL and Cisco 804 IDSL Router Feature Packs

Product Number	CD-ROM Title	Image Name (UNIX)	Image Name (DOS)	Flash Memory Required	Main Memory Required	RSL Installer Description
CD08-IC-12.0.5T=	Cisco 800 Series Internet DSL Feature Pack	c800-y6-mw	aaa1164	8 MB	4 MB	Cisco 800 Series Internet DSL Feature Pack 12.05.T
CD08-ICHL-12.0.5T=	Cisco 800 Series Internet DSL FW IPSec Feature Pack	c800-osy656i-mw	aaa1165	8 MB	8 MB	Cisco 800 Series Internet DSL, FW, IPSec Feature Pack 12.05.T
CD08-IBHL-12.0.5T=	Cisco 800 Series Internet DSL IPX FW IPSec Feature Pack	c800-nosy656i-mw	aaa1166	8 MB	8 MB	Cisco 800 Series Internet DSL, IPX,FW, IPSec Feature Pack 12.05.T

Feature Set Tables

The Cisco IOS software is packaged in feature sets consisting of software images—depending on the platform. Each feature set contains a specific set of Cisco IOS features. Release 12.0 T supports the same feature sets as Release 12.0, but Release 12.0 T can include new features supported by the Cisco 802 IDSL and 804 IDSL routers.

Table 5 Feature Sets Supported by the Cisco 802 IDSL and 804 IDSL Routers

Feature Sets	Image Names	Feature Set Matrix Term	Software Image	Platforms	In[1]
IP Feature Sets	Internet DSL	Basic[2]	c800-y6-mw	Cisco 802 IDSL Cisco 804 IDSL	(5)
	Internet DSL/FW/IPSec56	Basic, IPSec 56[3]	c800-osy656i-mw	Cisco 802 IDSL Cisco 804 IDSL	(5)
	Internet DSL/IPX/FW/ IPSec56	Basic, IPSec 56	c800-nosy656i-mw	Cisco 802 IDSL Cisco 804 IDSL	(5)

1. The number in the “In” column indicates the Cisco IOS release when the image was first introduced. For example, (5) means an image was introduced in Release 12.0(5)T. If a cell in this column is empty, the interface was included in the initial base release.
2. This feature set is offered in the basic feature set.
3. This feature set is offered in the encryption feature sets, which consist of IPSec 56-bit (Plus IPSec 56) data encryption feature sets.

Caution Cisco IOS images with strong encryption (including, but not limited to 168-bit (3DES) data encryption feature sets) are subject to United States government export controls and have limited distribution. Strong encryption images to be installed outside the United States may require an export license. Customer orders may be denied or subject to delay due to United States government regulations. When applicable, the purchaser or the user must obtain local import and use authorizations for all encryption strengths. Contact your sales representative or distributor for more information, or send an e-mail to export@cisco.com.

Table 6 lists the features and feature sets supported by the Cisco 800 routers in Cisco IOS Release 12.0(5)T and uses the following conventions:

- Yes—The feature is supported in the software image.
- No—The feature is not supported in the software image.
- In—The number in the "In" column indicates the Cisco IOS release in which the feature was introduced. For example, (5) means a feature was introduced in Release 12.0(5)T. If a cell in this column is empty, the feature was included in the initial base release.

Note The feature set table only contains a selected list of features. The table is not cumulative—nor does it list all the features in each image.

Table 6 Feature List by Feature Set for the Cisco 802 IDSL and 804 IDSL Routers

Features	In	Feature Set		
		Internet DSL	Internet DSL/FW/ IPSec56	Internet DSL/IPX/FW/ IPSec56
Analog Telephone Features				
Basic & Supplementary Features		No	No	No
Basic Security				
Extended Access Control Lists		Yes	Yes	Yes
Full NAT (including one-to-one, many-to-many, & many-to-one)		Yes	Yes	Yes
GRE Tunneling		No	No	No
Local Password		Yes	Yes	Yes
MS-CHAP		No	No	No
PAP, CHAP		Yes	Yes	Yes
Route and Router Authentication		No	No	No
Static Translation		Yes	Yes	Yes
Token Card Authentication		Yes	Yes	Yes

Table 6 Feature List by Feature Set for the Cisco 802 IDSL and 804 IDSL Routers (continued)

Features	In	Feature Set		
		Internet DSL	Internet DSL/FW/ IPSec56	Internet DSL/IPX/FW/ IPSec56
Ease of Use & Deployment				
Auto SPID/SWITCH Connection	(3)	No	No	No
Cisco Fast Step Equivalent		No	No	No
Configuration Express		Yes	Yes	Yes
DHCP Server	(3)	Yes	Yes	Yes
IPCP including Address Negotiations		Yes	Yes	Yes
TFTP Client /Server		Yes	Yes	Yes
Enhanced Security				
IOS Firewall Including:				
Context Based Access Control Lists/Stateful Inspection	(5)	No	Yes	Yes
Denial of Service Detection	(5)	No	Yes	Yes
Java Blocking	(5)	No	Yes	Yes
Real time alerts	(5)	No	Yes	Yes
IPSec Encryption w/ 56bit DES	(5)	No	Yes	Yes
L2TP	(5)	No	Yes	Yes
LAN				
Filtering		Yes	Yes	Yes
IP		Yes	Yes	Yes
IPX WAN		No	No	Yes
NetBIOS Access Lists, Name Caching		Yes	Yes	Yes
Transparent Bridging (including Spanning Tree)		Yes	Yes	Yes
Management				
BootP Server		No	No	No
DHCP/BootP Relay	(3)	Yes	Yes	Yes
Interactive (IOS) Debug		Yes	Yes	Yes
Interface Statistics		Yes	Yes	Yes
Loopback Testing		Yes	Yes	Yes
Monitor Tool		Yes	Yes	Yes
Performance History		Yes	Yes	Yes
SNTP		No	No	No
SNMP Read & Write (set & read MIB's)		No	No	No

Table 6 Feature List by Feature Set for the Cisco 802 IDSL and 804 IDSL Routers (continued)

Features	In	Feature Set		
		Internet DSL	Internet DSL/FW/ IPSec56	Internet DSL/IPX/FW/ IPSec56
SNMP Read only		Yes	Yes	Yes
Syslog		No	No	No
TACACS+		No	No	No
Telnet, Console Port		Yes	Yes	Yes
User programmable Menu System		No	No	No
Routing				
IP Enhanced IGRP		No	No	No
IP Multicast (relay only)		No	No	No
IP-Policy Routing		No	No	No
IPX WAN		No	No	Yes
RIP		Yes	Yes	Yes
RIPv2,		Yes	Yes	Yes
Triggered RIP		Yes	Yes	Yes
WAN				
Frame Relay (Leased Line Only)		Yes	Yes	Yes
HDLC		Yes	Yes	Yes
IDSL		Yes	Yes	Yes
ISDN		No	No	No
ISDN Lease Line		Yes	Yes	Yes
ML-PPP		Yes	Yes	Yes
PPP		Yes	Yes	Yes
Selectable settings up to 144Kbps		Yes	Yes	Yes
Virtual Templates		No	No	No
WAN Optimization				
AO/DI		No	No	No
Bandwidth on Demand		No	No	No
Dial on Demand Routing		No	No	No
Fair Queuing		Yes	Yes	Yes
IPX & SPX Spoofing		No	No	Yes
ISDN Caller ID Call-back		No	No	No
Snapshot Routing		No	No	No
Stac Compression		Yes	Yes	Yes
Weighted Fair Queuing		No	No	No
X.25 over D Channel		No	No	No

Installation Notes

This section describes the following topics:

- Image Installation Tips and Troubleshooting When Using RSL, page 9
- Alternatives to RSL, page 10

Image Installation Tips and Troubleshooting When Using RSL

Image Installation Tips

The following information about RSL operations can help you with the installation process:

- If you are loading software on a preconfigured router, save the router configuration file on your PC before running RSL.
- If you have added any static entries to the PC Address Resolution Protocol (ARP) table, one or more of them may be deleted by RSL. Manually re-enter any deleted entries in the PC ARP table.
- During a connection, if the router's running configuration is not the same as its startup configuration, the exact configuration is not restored. Any changes that you made since the last time you entered **copy running-config startup-config** or **write memory** commands are lost.
- RSL restores the router's startup configuration, but some running configuration commands are not restored. To restore the exact running configuration, reboot the router. The following interface configuration commands are not restored to the running configuration:
  - **no shutdown**
  - **no ringspeed**
  - **media-type aui**

Recovering from a Connection Error

If any of the following elements apply to your installation, modify the Short Timeout value from the Options dialog box in RSL:

- You are connecting to a router or access server that has a large configuration file.
- You are connecting to a Cisco AS5200 access server.
- You see the following error message:

```
"Failed to configure the router to enable the Cisco IOS software image and configuration
file upload and download operations. You may want to check the router to make sure that
the selected interface exists."
```

If you are connecting to a Cisco AS5200, increase the Short Timeout value to 60 seconds. The Cisco AS5200 requires up to 45 seconds to write a configuration to nonvolatile random-access memory (NVRAM) due to the number of interfaces the it must check during this process.

If you are connecting to any other router or access server, increase the Short Timeout to a value over 25 seconds.

Note If you change the timeout value, you must do so before connecting to the router, or the new value will not be used. Also, increasing the Short Timeout value can increase the time it takes for RSL to connect to the target router.

Restoring the Startup Configuration

In some cases, RSL is unable to restore the startup configuration. If this happens, follow these steps:

Step 1 Ensure that all cables are properly attached to both the router and the PC.

Step 2 Restart RSL and connect by using the **Preconfigured router** option.

Step 3 When asked if you want to overwrite the existing startup configuration file, choose **no**.

Step 4 When asked if you want to continue, choose **yes**.

Step 5 When the router is connected, select **Download Router Configuration** in the Router Software Loader dialog box.

Step 6 Select the appropriate file and click the radio button beside **Copy configuration to the router nonvolatile memory**. The router should now contain the startup configuration it had before the initial RSL connection.

Step 7 Exit RSL.

Note In the steps above, the router configuration register (**config-register 0x***nnnn*) is not restored.

Note If you press **Ctrl-Alt-Delete** to quit RSL, the router configuration and the configuration register are not restored. However, the configuration file is not deleted from the PC. To restore the configuration file, follow the steps above, beginning with Step 2.

Alternatives to RSL

RSL is designed to work with a PC running Microsoft Windows 95 and is the recommended method for downloading software to the router; however, two alternatives are available for installing router software:

- Installing the Router Software by Using the Console
- Installing the Router Software by Using a TFTP Server Application

Note The sample prompts and output shown in the following sections may not be identical to the prompts displayed on the router console.

Installing the Router Software by Using the Console

This section explains how to use the **copy xmodem flash** command to install the router software from the CD-ROM onto the router.

The following example shows how to use the **copy xmodem flash** command on a Cisco 802 IDSL or Cisco 804 IDSL router:

```
Router# copy xmodem flash
                              **** WARNING ****
       x/ymodem is a slow transfer protocol limited to the current speed
       settings of the auxiliary/console ports. The use of the auxilary
       port for this download is strongly recommended.
       During the course of the download no exec input/output will be
       available.
                              ---- ******* ----
       Proceed? [confirm] yes
       Use crc block checksumming? [confirm] yes
       Max Retry Count [10]:
       Perform image validation checks? [confirm] yes
       Xmodem download using crc checksumming with image validation
       Continue? [confirm] yes
       Partition   Size    Used      Free      Bank-Size  State          Copy Mode
         1         4096K   3259K      836K     4096K      Read/Write     Direct
         2         4096K      0K     4095K     4096K      Read/Write     Direct

       [Type ?<no> for partition directory; ? for full directory; q to abort]
       Which partition? [default = 1] 2

       System flash directory, partition 2:
       File  Length   Name/status
         1   68       TESTFILE
       [132 bytes used, 4194172 available, 4194304 total]
       Destination file name? c800-y6-mw.120-5T
       Erase flash device before writing? [confirm] yes
       Flash contains files. Are you sure you want to erase? [confirm] yes

       Copy '' from server
         as 'c800-y6-mw.120-5T' into Flash WITH erase? [yes/no] yes
       Erasing device... eeeeeeeeeeeeeee ...erased
       Ready to receive file..........C
       Verifying checksum...  OK (0x5DE8)
       Flash device copy took 00:12:06 [hh:mm:ss]
```

Installing the Router Software by Using a TFTP Server Application

Use this TFTP server application method as an alternative method to install the router software from the CD-ROM. You can perform this procedure by using a PC (running Microsoft Windows 95 or Microsoft Windows 3.1), a Macintosh, or a UNIX system. You can use either the **copy tftp flash** or **copy rcp flash** command to download the router software to the router.

First, obtain a TFTP application or a remote copy protocol (rcp) application to set up your computer as a TFTP server or an rcp server. If you are using a PC running Windows 95, you can use RSL or the TFTP server included on the feature pack CD-ROM to install the router software. For other operating systems, a number of TFTP or rcp applications are available from independent software vendors or as shareware on the World Wide Web.

Note To use an rcp application, follow the same procedure below, but substitute “rcp” for “TFTP” and use the **copy rcp flash** command instead of the **copy tftp flash** command.

Step 1 Install any TFTP server application on the PC. (A PC application is included on the feature pack CD-ROM for Microsoft Windows 95 only.)

Step 2 Start the TFTP server application on the PC by double-clicking the application icon or its .exe filename.

Step 3 Set up the PC as a TFTP server by using the TFTP server application setup or configuration facility.

Most TFTP server applications include a setup facility that allows you to specify the PC as a server. For example, from the TFTP menu of one application, select **Settings** to display a panel. To configure the local PC as a server, select the Server checkbox.

Select a root directory where the Cisco IOS files reside (for example, d:\cpswinst\images).

Caution Make sure you set up your local PC as a TFTP server. If you do not, you cannot perform the copy procedure. This caution applies to both TFTP and rcp.

Step 4 Establish a console session from your local PC (which is now configured as a TFTP server) to the Cisco router by using one of these methods:

- Connect the PC com port to the router console port.

  This is the recommended method. When you reload the router with the new image in Step 10, you remain connected to the router.

- Establish a Telnet session from the PC to the router. If you choose to use Telnet, your connection to the router will be lost when it is reloaded.

Caution Make sure that your PC is set up to communicate with the connected device through its network port.

Step 5 Connect your PC's LAN port to the corresponding LAN port on the router. If you are making a direct connection to the router via Ethernet or Fast Ethernet, use an Ethernet crossover cable. If connecting to the router via an Ethernet or Fast Ethernet hub or Token Ring MAU (hub), use straight-through cable.

Note We recommend that you back up the router configuration before upgrading the router software.

Step 6 At the prompt, enter the IP address of your PC, as shown in the following example:

```
Address or name of remote host [255.255.255.255]? 131.108.1.1
```

This is the IP address of your local PC, not that of the router.

Step 7 At the prompt, enter the filename of the Cisco IOS Release 12.0 image to be copied to the router, as shown in the following example:

```
Source file name? aaa1164.bin
```

This example specifies the DOS image name of the IP feature set for Cisco 802 IDSL and Cisco 804 IDSL routers (as shown in Table 4 in the "Feature Pack Overview Table" section on page 5).

Step 8 At the prompt, enter the destination UNIX image filename and press **Enter**.

This is the name of the image file on the router—not the full pathname of the image on the CD-ROM attached to the PC. Refer to Table 4 in the "Feature Pack Overview Table" section on page 5 for the UNIX image filename.

```
Destination file name [aaa1164.bin]? c800-y6-mw
```

During the transfer process, the software displays messages indicating that it has accessed the file you have specified and is loading it.

Step 9 At the prompt, enter **yes** if you want to erase the existing image copy resident in the router Flash memory before copying the new one.

```
Erase flash device before writing? [confirm] yes
```

The entire copying process takes several minutes and differs from network to network.

The exclamation point (!) indicates that the copy process is taking place. Each exclamation point (!) indicates that ten packets have been transferred successfully. A checksum verification of the image occurs after the image is written to Flash memory.

Step 10 Enter the **reload** command to reload the router:

```
Router# reload
```

After the reload is complete, the router should be running the required Cisco IOS image. Use the **show version** command to verify it.

Related Documentation

The following sections describe the documentation available for the Cisco 802 IDSL and 804 IDSL routers. These documents consist of hardware and software installation guides, Cisco IOS configuration and command references, system error messages, feature modules, and other documents. Documentation is available as printed manuals or electronic documents, except for feature modules, which are available online on CCO and the Documentation CD-ROM.

Use these release notes with the documents listed in the following sections:

- Release-Specific Documents, page 13
- Platform-Specific Documents, page 14
- Feature Modules, page 15
- Cisco IOS Software Documentation Set, page 15

Release-Specific Documents

The following documents are specific to Release 12.0. They are located on CCO and the Documentation CD-ROM:

- *Release Notes for Cisco IOS Release 12.0*
  - To reach the *Cross-Platform Release Notes for Cisco IOS Release 12.0* from CCO, click on this path (under the heading **Service & Support**):

    Technical Documents: **Documentation Home Page**: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.0**: **Release Notes**: **Cross-Platform Release Notes**

  - To reach the *Cross-Platform Release Notes for Cisco IOS Release 12.0* on the Documentation CD-ROM, click on this path:

    Cisco Product Documentation: Cisco IOS Software Configuration: **Cisco IOS Release 12.0**: **Release Notes**: **Cross-Platform Release Notes**

- Product bulletins, field notices, and other release-specific documents

  To reach these documents from CCO, click on this path (under the heading **Service & Support**):

  Technical Documents: **Product Bulletins**

- *Caveats for Cisco IOS Release 12.0 T*

  See the *Caveats for Cisco IOS Release 12.0* and *Caveats for Cisco IOS Release 12.0 T* documents, which contains caveats applicable to all platforms for all maintenance releases of Release 12.0.

  - To reach the caveats document from CCO, click on this path (under the heading **Service & Support**):

    Technical Documents: **Documentation Home Page**: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.0**: **Caveats**

  - To reach the caveats document on the Documentation CD-ROM, click on this path:

    Cisco Product Documentation: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.0**: **Caveats**

Note If you have an account with CCO, you can use Bug Navigator II to find caveats of any severity for any release. You can reach Bug Navigator II on CCO at **Software Center**: **Cisco IOS Software**: **BUG TOOLKIT**: **Cisco Bug Navigator II**, or at http://www.cisco.com/support/bugtools/bugtool.shtml.

Platform-Specific Documents

These documents are available for the Cisco 802 IDSL and 804 IDSL routers on CCO and the Documentation CD-ROM.

- *Cisco 800 Series Routers Hardware Installation Guide*
- *Quick Start Guide — Setting up Cisco 800 Series Routers*
- *Regulatory Compliance and Safety Info For Cisco 800 Series*
- *Cisco 800 Series Routers Software Configuration Guide*
- *Cisco 800 Fast Step Quick Start Guide*
- *Upgrading Memory in the Cisco 800 Series Routers*
- *Release Notes for Cisco 800 Series Routers*

To reach Cisco Cisco 800 Series documentation from CCO, click on this path (under the heading **Service & Support**):

Technical Documents: **Documentation Home Page**: **Access Servers and Access Routers**: **Fixed Access Routers**: **Cisco 800 series**

To reach Cisco Cisco 800 Series documentation on the Documentation CD-ROM, click on this path:

Cisco Product Documentation: **Access Servers and Access Routers**: **Fixed Access Routers**: **Cisco 800 series**

Feature Modules

Feature modules describe new features supported by Release 12.0 T and are updates to the Cisco IOS documentation set. A feature module consists of a brief overview of the feature, benefits, configuration tasks, and a command reference. As updates, the feature modules are available online only. Feature module information is incorporated in the next printing of the Cisco IOS documentation set.

To reach the feature modules from CCO, click on this path (under the heading **Service & Support**):

Technical Documents: **Documentation Home Page**: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.0**: **New Feature Documentation**

To reach the feature modules on the Documentation CD-ROM, click on this path:

Cisco Product Documentation: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.0**: **New Feature Documentation**

Cisco IOS Software Documentation Set

The Cisco IOS software documentation set consists of the Cisco IOS configuration guides, Cisco IOS command references, and several other supporting documents that are shipped with your order in electronic form on the Documentation CD-ROM—unless you specifically ordered the printed versions.

Documentation Modules

Each module in the Cisco IOS documentation set consists of two books: a configuration guide and a corresponding command reference. Chapters in a configuration guide describe protocols, configuration tasks, Cisco IOS software functionality, and contain comprehensive configuration examples. Chapters in a command reference provide complete command syntax information. Use each configuration guide with its corresponding command reference. On CCO and the Documentation CD-ROM, two master hot-linked documents provide information for the Cisco IOS software documentation set.

On CCO (under the heading **Service & Support**):

Technical Documents: **Documentation Home Page**: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.0**: **Configuration Guides and Command References**

On the Documentation CD-ROM:

Cisco Product Documentation: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.0**: **Configuration Guides and Command References**

Release 12.0 Documentation Set

Table 7 describes the contents of the Cisco IOS Release 12.0 software documentation set, which is available in electronic form and in printed form upon request.

Note You can find the most current Cisco IOS documentation on CCO and the Documentation CD-ROM. These electronic documents may contain updates and modifications made after the hard-copy documents were printed.

On CCO at (under the heading **Service & Support**):

Technical Documents: **Documentation Home Page**: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.0**

On the Documentation CD-ROM at:

Cisco Product Documentation: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.0**

Table 7 Cisco IOS Software Release 12.0 Documentation Set

Books	Chapter Topics
• *Configuration Fundamentals Configuration Guide* • *Configuration Fundamentals Command Reference*	Configuration Fundamentals Overview Cisco IOS User Interfaces File Management System Management
• *Bridging and IBM Networking Configuration Guide* • *Bridging and IBM Networking Command Reference*	Transparent Bridging Source-Route Bridging Token Ring Inter-Switch Link Remote Source-Route Bridging DLSw+ STUN and BSTUN LLC2 and SDLC IBM Network Media Translation DSPU and SNA Service Point SNA Frame Relay Access Support APPN Cisco Database Connection NCIA Client/Server Topologies Cisco Mainframe Channel Connection Airline Product Set
• *Dial Solutions Configuration Guide* • *Dial Solutions Command Reference*	X.25 over ISDN Appletalk Remote Access Asynchronous Callback, DDR, PPP, SLIP Bandwidth Allocation Control Protocol ISDN Basic Rate Service ISDN Caller ID Callback PPP Callback for DDR Channelized E1 & T1 Dial Backup for Dialer Profiles Dial Backup Using Dialer Watch Dial Backup for Serial Lines Peer-to-Peer DDR with Dialer Profiles DialOut Dial-In Terminal Services Dial-on-Demand Routing (DDR) Dial Backup Dial-Out Modem Pooling Large-Scale Dial Solutions Cost-Control Solutions Virtual Private Dialup Networks Dial Business Solutions and Examples

Table 7 Cisco IOS Software Release 12.0 Documentation Set (continued)

Books	Chapter Topics
• *Cisco IOS Interface Configuration Guide* • *Cisco IOS Interface Command Reference*	Interface Configuration Overview LAN Interfaces Logical Interfaces Serial Interfaces
• *Network Protocols Configuration Guide, Part 1* • *Network Protocols Command Reference, Part 1*	IP Overview IP Addressing and Services IP Routing Protocols
• *Network Protocols Configuration Guide, Part 2* • *Network Protocols Command Reference, Part 2*	AppleTalk Novell IPX
• *Network Protocols Configuration Guide, Part 3* • *Network Protocols Command Reference, Part 3*	Network Protocols Overview Apollo Domain Banyan VINES DECnet ISO CLNS XNS
• *Security Configuration Guide* • *Security Command Reference*	AAA Security Services Security Server Protocols Traffic Filtering and Firewalls IP Security and Encryption Passwords and Privileges Neighbor Router Authentication IP Security Options
• *Cisco IOS Switching Services Configuration Guide* • *Cisco IOS Switching Services Command Reference*	Switching Services Switching Paths for IP Networks Virtual LAN (VLAN) Switching and Routing
• *Wide-Area Networking Configuration Guide* • *Wide-Area Networking Command Reference*	Wide-Area Network Overview ATM Frame Relay SMDS X.25 and LAPB
• *Voice, Video, and Home Applications Configuration Guide* • *Voice, Video, and Home Applications Command Reference*	Voice over IP Voice over Frame Relay Voice over ATM Voice over HDLC Frame Relay-ATM Internetworking Synchronized Clocks Video Support Universal Broadband Features

Table 7 Cisco IOS Software Release 12.0 Documentation Set (continued)

Books	Chapter Topics
• *Quality of Service Solutions Configuration Guide* • *Quality of Service Solutions Command Reference*	Policy-Based Routing QoS Policy Propagation via BGP Committed Access Rate Weighted Fair Queueing Custom Queueing Priority Queueing Weighted Random Early Detection Scheduling Signaling RSVP Packet Drop Frame Relay Traffic Shaping Link Fragmentation RTP Header Compression
• *Cisco IOS Software Command Summary* • *Dial Solutions Quick Configuration Guide* • *System Error Messages* • *Debug Command Reference*	

Note *Cisco Management Information Base (MIB) User Quick Reference* is no longer published. For the latest list of MIBs supported by Cisco, see *Cisco Network Management Toolkit* on Cisco Connection Online. From CCO, click on the following path: **Service & Support**: **Software Center**: **Network Mgmt Products**: **Cisco Network Management Toolkit**: **Cisco MIB**.

Service and Support

For service and support for a product purchased from a reseller, contact the reseller, who offers a wide variety of Cisco service and support programs described in "Service and Support" of *Cisco Information Packet* that shipped with your product.

Note If you purchased your product from a reseller, you can access CCO as a guest. CCO is Cisco Systems' primary real-time support channel. Your reseller offers programs that include direct access to CCO services.

For service and support for a product purchased directly from Cisco, use CCO.

Software Configuration Tips on the Cisco Technical Assistance Center Home Page

If you have a CCO login account, you can access the following URL, which contains links and tips on configuring your Cisco products:

http://www.cisco.com/kobayashi/serv_tips.shtml

This URL is subject to change without notice. If it changes, point your Web browser to CCO and click on this path: **Products & Technologies**: **Products**: **Technical Tips.**

The following sections are provided from the Technical Tips page:

- Access Dial Cookbook—Contains common configurations or recipes for configuring various access routes and dial technologies.
- Field Notices—Notifies you of any critical issues regarding Cisco products and includes problem descriptions, safety or security issues, and hardware defects.
- Frequently Asked Questions—Describes the most frequently asked technical questions about Cisco hardware and software.
- Hardware—Provides technical tips related to specific hardware platforms.
- Hot Tips—Describes popular tips and hints gathered from the Cisco Technical Assistance Center (TAC). Most of these documents are available from the TAC Fax-on-demand service. To reach Fax-on-demand and receive documents at your fax machine from the United States, call 888-50-CISCO (888-502-4726). From other areas, call 650-596-4408.
- Internetworking Features—Lists tips on using Cisco IOS software features and services.
- Sample Configurations—Provides actual configuration examples that are complete with topology and annotations.
- Software Products—Contains Cisco IOS Software Bulletins, Cisco TCP/IP Suite 100, General Cisco IOS, Internet/Intranet Applications and Software, Network Management, Network Protection Software Tips, and WAN Switching Products and Software.
- Special Collections—Lists other helpful documents, including Case Studies, References & Request for Comments (RFCs), and Security Advisories.

Cisco Connection Online

Cisco Connection Online (CCO) is Cisco Systems' primary, real-time support channel. Maintenance customers and partners can self-register on CCO to obtain additional information and services.

Available 24 hours a day, 7 days a week, CCO provides a wealth of standard and value-added services to Cisco's customers and business partners. CCO services include product information, product documentation, software updates, release notes, technical tips, the Bug Navigator, configuration notes, brochures, descriptions of service offerings, and download access to public and authorized files.

CCO serves a wide variety of users through two interfaces that are updated and enhanced simultaneously: a character-based version and a multimedia version that resides on the World Wide Web (WWW). The character-based CCO supports Zmodem, Kermit, Xmodem, FTP, and Internet e-mail, and it is excellent for quick access to information over lower bandwidths. The WWW version of CCO provides richly formatted documents with photographs, figures, graphics, and video, as well as hyperlinks to related information.

You can access CCO in the following ways:

- WWW: http://www.cisco.com
- WWW: http://www-europe.cisco.com
- WWW: http://www-china.cisco.com
- Telnet: cco.cisco.com
- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

For a copy of CCO's Frequently Asked Questions (FAQ), contact cco-help@cisco.com. For additional information, contact cco-team@cisco.com.

Note If you are a network administrator and need personal technical assistance with a Cisco product that is under warranty or covered by a maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or tac@cisco.com. To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or cs-rep@cisco.com.

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM, a member of the Cisco Connection Family, is updated monthly. Therefore, it might be more current than printed documentation. To order additional copies of the Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription. You can also access Cisco documentation on the World Wide Web at http://www.cisco.com, http://www-china.cisco.com, or http://www-europe.cisco.com.

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